New Ridge Mining Company

KPDES Coal General Permit HQAA Application Attachments for KDNR #848-0260

Attachment II.1.A:

Existing treatment facilities, such as the Sediment Lake in Turtle Creek and municipal systems, were considered. The Sediment Lake in Turtle Creek was considered unfeasible due the distance from the disturbed area being over 8,000 feet resulting in an increase in stream impacts. Pumping and/or trucking the effluent to a municipal treatment system were considered. The nearest WWTP is the City of Harlan. The nearest connection to this system is at Grays Knob which is just over 20,000 feet from the disturbance. At an estimated cost of $180/ft. including pumping stations, the cost to pump the effluent to this WWTP system would be over $3.6 million. With a combined peak discharge during a 25 year/24 hour storm of over 1,100 cfs from the discharging dugout ponds and a combined peak discharge during a 50 year/24 hour storm of over 2,800 cfs from the earthdam ponds, trucking the peak effluent from the dugout and earthdam ponds to the nearest WWTP would take 90 trucks per minute hauling 20,000 gallons per load. With a cycle time estimated at 1 hour, the number of trucks required during peak discharge would exceed 5,400. The transportation infrastructure of KY 990 and US 421 cannot sustain this volume of truck traffic. Additionally, this volume of truck traffic in this rural area with dwellings located near KY 990 would most likely result in a significant increase in traffic fatalities and pose a health and safety problem for the local residents. Construction costs estimated for the 19 discharging ponds on this operation is just over $350k. Also, the Harlan WWTP is not designed to treat sediment laden effluent.

Attachment II.2.A:

Other discharge locations were considered for this operation. Other discharge locations considered were pumping into adjacent watersheds of Gabes Branch, Jones Creek and Little Creek. The water quality of these adjacent watersheds is very similar to that of Turtle Creek. Turtle Creek nor any of the named watersheds are considered impaired by KDOW, therefore there is no measured benefit of discharging in other watersheds. Some of the outfalls were designed to discharge in the Little Creek watershed since that is where they are located. Pumping systems necessary to pump the effluent to these other watersheds for the given peak discharge volume is estimated to be over $4 million. All other alternate discharge locations were considered less desirable due to higher density of resident populations in the named watersheds. Also, Turtle Creek has a lower habitat quality than these adjacent watersheds. Topography and soil conditions also limit the locations of pond construction.

Attachment II.3.A

New Ridge Mining Company will reuse approximately 10k gallons per day of disturbed surface water runoff from the ponds for fugitive dust control. During spring and fall planting seasons (Mar. 15 to June 15 and Sept. 15 to Oct. 31), the applicant reuses approximately 20k gallons per day in the hydroseeding reclamation process. The coal preparation plant at this operation will reuse over 100k gallons per day. With a combined peak discharge during a 25 year/24 hour storm of over 1,100 cfs (710 million gallons per day) from the discharging dugout ponds and a combined peak discharge during a 50 year/24 hour storm of over 2,800 cfs (1.8 billion gallons per day) from the earthdam ponds, it can be concluded that the peak discharge from these outfall locations would far exceed the maximum of 130k gallons per day that can be reused, thus necessitating discharge.

Attachment II.4.A:

Alternative processes and treatment options considered include clarifiers, filters, anoxic limestone drains, successive alkalinity-producing systems, limestone sand dosing, limestone channels, limestone diversion wells, package treatment plant and constructed wetlands. Clarifiers and filters were eliminated due to construction, operations and maintenance costs , estimated to be 1 to 1.5 million dollars for construction and 0.25 to 0.5 million dollars per year for operations and maintenance, far exceeding pond construction and maintenance costs. Also, neither of these processes performs the flood prevention function of the pond. ALDs, SAPs, limestone sand dosing, limestone channels, limestone diversion wells are designed for Acid Mine Drainage treatment only, which this site does not exhibit and do not perform the functions of the drainage ponds, which are sediment retention and flood prevention. Also, the cost of construction, estimated to be $250,000 each and maintenance costs of $100,000 per year, far exceed the cost of construction and maintenance of pond. A small package treatment plant was considered, but at an estimated cost of construction of approximately $2 million with operations and maintenance costs of $0.5 million to $0.75 million, was eliminated due to excessive cost. Constructed wetlands were considered, but eliminated due to topography and inability to perform the functions of the drainage ponds. The cost to construct wetlands would exceed $0.5 million dollars and operations and maintenance costs are estimated to be $100,000 to $200,000 per year, exceeding the cost of pond construction and maintenance.

Attachment II.5.A:

Both on-site disposal into the soil and subsurface disposal into subsurface geologic formations and abandoned underground mines were evaluated. Soil information from the USDA was evaluated to determine if any soils in the area were suitable for waste water disposal in accordance with Kentucky Health Department standards. No soils in the area were suitable for waste water disposal. The Evarts, USGS Quadrangle was investigated for potential geologic formations suitable for subsurface injection. No formations with suitable porosity and permeability were indicated. Also, the fresh water zone is approximately 800 feet deep in valley floor areas with most residents in the area utilizing the stress-relief fracture aquifer system. Injection of waste water into this zone would adversely impact the health of local residents and would not be in accordance with EPA injection wells regulations.

Attachment II.6.A:

Other alternatives to lowering water quality were evaluated as previously discussed in sections II, 1-5. Other alternatives not previously discussed but evaluated, included a no-action alternative, commercial marketing of wastewater, natural evaporation, land application, and incineration. Given the abundance of water sources in this area, the annual rainfall rates of 40-50 inches per year and no known demand for this type of wastewater, this alternative was not considered reasonable for the amount of wastewater with these characteristics. With annual rainfall rate of 40-50 inches per year and a evaporation rate of approximately 30-36 inches per year for this region, natural evaporation would result in a natural surplus of water. Also, the topography of the area is not suitable for large enough evaporation ponds to increase evaporation rates. A land application alternative was evaluated, but considered to be an unpractical alternative due to the annual rainfall rate and evapotranspiration rate of vegetation in the region. The incineration alternative was considered. Incineration would involve vaporizing the wastewater through introduction of heat energy. Given that it takes 960 Btu of energy to turn 1 pound of water into steam and there are 8.84 lbs of in each gallon of water. With a peak discharge of over 1.8 billion gallons per day, it would take 1.5276×10^{13} Btu to incinerate the wastewater. This amount of energy would cost over $90 million per day, which is far greater than the cost to construct sediment ponds. When evaluating the alternatives considered above and in sections II, 1-5, versus the projected amount of lowering in water quality, no other cost effective alternative could

be found to construction of ponds and acceptance of the proposed water quality limits. The no action alternative was considered and given the impacts to the local economy of Harlan County, loss of 50 direct and 150 indirect local jobs and approximately $300,000 in annual severance taxes returned to Harlan County.

Attachment III.1.A

Positive and beneficial effects of this facility on the existing environment and public health include:

A. An increase in employment in Harlan County, Kentucky.
B. An increase in tax revenues.
C. Reclamation of previous disturbances. The proposed project area has numerous previous disturbances including pre-law mining on the numerous existing benches estimated to be approximately 107.11 acres, which also includes existing access roads. There are also extensive previous logging disturbances estimated to be over 300 acres. Oil and gas exploration estimated to be 15 acres, and utility line construction estimated to be 80 acres. Runoff from these existing disturbances is currently entering the receiving streams mostly unabated, unregulated and is not being monitored. This project will treat surface runoff from all of these existing disturbances and the post mining land use will result in a decrease in uncontrolled surface runoff and an increase in forested lands.

Attachment III.2.A

Approximately 50 people will be directly employed by this project and another 150 are estimated to be indirectly employed. Approximately 90% will be residents of Kentucky. U.S. Bureau of Labor statistics indicate that Harlan County, Kentucky had an unemployment rate of 10.3% in Sept. of 2007 compared to 5.6 percent for the Commonwealth of Kentucky. The number of persons below the poverty level in Harlan County, as reported in 2004, was 29.3% as compared to 5.6% for the Commonwealth of Kentucky. Direct mining employment for Harlan County in 2006 was 1,318 and the miners as a percent of total employment in the county is 14. The mining wages paid in Harlan County for 2006 was over $80 million. Mining wages accounted for 30.9% of the total wages in Harlan County in 2006 compared to 14% of the total employment, meaning that the mining wages are much higher than the average wages for the county. The direct and indirect employment by this project will decrease the unemployment rate to 8.41%.

Attachment III.3.A

Since this application is for an original permit on an idle property, the estimated 50 employees will be new jobs for this area. Currently there are approximately 9,250 jobs in Harlan County. 24% of the employed males in this county are employed by mining. The direct employment of 50 new mining jobs would increase the number of mining jobs by 3.8%. The additional 150 indirect jobs would increase the mining jobs by 9.7%. The direct and indirect employment by this project will decrease the unemployment rate from 10.3% to 8.3%.

Attachment III.4.A

The total revenue generated from this operation is estimated to be $320 million. The severance tax rate for coal companies is approximately 4.5 percent and it is estimated that this project area will generate approximately $14.4 million in severance taxes for the Commonwealth of Kentucky. The post-mining land use will also increase the property values by improving accessibility and usable land after mining. Indirect employment due to related goods and services is estimated to be 150.

Attachment III.5.A

Operation of this mine will allow local residents (90% of the 50 direct and 60% of the 150 indirect) to remain employed in their home county, thus maintaining their cultural heritage and reduce travel costs. Increases and continuation of community services will also be a benefit of the project due to increases and continuation of severance tax payments, employment of local citizens of Harlan County. Total revenue from this operation is estimated to be $320 million and the estimated wages from the direct employment of 50 people is estimated to be over $3 million annually. The estimated annual wages for the 150 indirect employees is estimated to be over $5.4 million. This $8.4 million in annual payroll will have a net positive impact on the local economy by providing disposable income to be used for necessary expenses such as home mortgages, rent, medical needs, taxes, retail clothing, food, energy, transportation and utilities. This $8.4 million in annual payroll will also benefit the local economy through discretionary spending such as secondary education, entertainment, recreation, tourism, and dining out. Benevolence and charitable giving will also benefit from this increase in annual payroll. These economic benefits will result in an overall improvement of the social and economic structure of the local area by improving education and providing more opportunity to improve the standard of living and decrease the poverty levels. Social benefits include local residents being able to stay in the home community to earn a living thus preserving their culture and heritage. Extended families will have the opportunity to stay in closer proximity to provide support of the family structure beyond the nuclear family such as child care, sharing transportation, and nurturing of children. Of the $14.5 million in coal severance taxes mentioned in Attachment III.4.A approximately half will be returned to the area, including Harlan County. These coal severance taxes could be used to subsidize and provide funding for important public services in this rural area such as ambulance service, fire protection, police protection, water and sewer projects and educational needs. The increases in the local economy, and improvement of social structure will result in a decrease of depression, drug or alcohol abuse, crime.

Attachment III.11.A

The 50 households with direct employment will be directly affected and the 150 households with indirect employment will be indirectly affected. The direct economic impacts for the 50 employed households are estimated to be in excess of $3 million in annual payroll. The estimated annual payroll for the 150 indirectly impacted households is over $5.4 million. This $8.4 million in annual payroll will have a net positive impact on the local economy by providing disposable income to be used for necessary expenses such as home mortgages, rent, medical needs, taxes, retail clothing, food, energy, transportation and utilities. This $8.4 million in annual payroll will also benefit the local economy through discretionary spending such as secondary education, entertainment, recreation, tourism, and dining out. Benevolence and charitable giving will also benefit from this increase in annual payroll. These economic benefits will result in an overall improvement of the social and economic structure of the local area by improving education and providing more opportunity to improve the standard of living and decrease the poverty levels. Social benefits include local residents being able to stay in the home community to earn a living thus preserving their culture and heritage. Extended families will have the opportunity to stay in closer proximity to provide support of the family structure beyond the nuclear family such as child care, sharing transportation, and nurturing of children. The unemployment rate for Harlan County in Sept. of 2007 was 10.3 percent compared to 5.6 for Kentucky. The direct and indirect employment by this project will decrease the unemployment rate by 1.89%. Therefore, continued employment of residents of Harlan County is vital to the economic and social structure of this small county. The current population of Harlan County is 31,614, in 2004 is was 31,927, in the 2000 census it

was 33,202 and the 1990 census was 36,574, indicating a downward trend in population and employment. The increases in the local economy, and improvement of social structure will result in a decrease of depression, drug or alcohol abuse, crime.

Attachment III.12.A

Although this project does not provide any type of sewage treatment, it does provide additional treatment of disturbed runoff from previously disturbed areas. The proposed sediment treatment ponds will also replace some older, less efficient sediment ponds within the watersheds for other permitted disturbances that were not designed and built to the current standards, thus providing more effective sediment control treatment.

Attachment III.13.A

Approximately 107.11 acres of the 851.62 acres being proposed by this project were previously disturbed by pre-law mining. The surface runoff from the 107.11 acres of un-reclaimed mining areas currently discharges into the receiving streams untreated and unmonitored. There are also extensive previous logging disturbances estimated to be over 300 acres. Oil and gas exploration estimated to be 15 acres, and utility line construction estimated to be 80 acres. As the result of this project all of the runoff from the 851.62 acres will be treated and monitoring.

Attachment III.14.A

This project will eliminate substandard discharge from 107.11 acres of previously disturbed, pre-law mining areas located on the existing mine benches. These disturbances were mined pre-law with little to no reclamation. Natural vegetation has partially reclaimed these areas. The proposed project will involve remining of these areas and reclaiming them to current regulatory standards with very little erosion or substandard water quality runoff. Existing logging operations within the mining area above the Wallins bench, have also created erosion which will be eliminated by mining and reclamation. There is also a pre-law refuse area in the Left Fork of Turtle Creek that is over 50 acres that will be reclaimed as part of this operation. This project also includes over 9,100 feet of stream mitigation as part of the USCOE 404 permit that will raise the physical and biological integrity of the existing stream channels.

Attachment III.15.A

The proposed project area will generate approximately $14.4 million in severance taxes and total revenue of approximately $36 million dollars for the Commonwealth of Kentucky. Increases in production levels such as proposed by this project will create more jobs. Production levels in small eastern Kentucky counties like Harlan County are directly related to employment rates and economic prosperity of the local governments where 24% of the male workforce is employed by mining. 50 direct high paying jobs will be created and an estimated 125 in indirect jobs will be created. With an increase in employment and wages, consumer confidence in Harlan County will also likely increase economic growth in other sectors of business. Coal production in Harlan County has remained constant over the last decade with production being 11 million in 2006, 10.2 million in 2000 and 11.1 million in 1996. With over half of the electricity in the United States being generated by coal and over 97% in Kentucky, increases in coal production will decrease the dependence on non-domestic sources of energy and lower utility costs. The median income in Harlan County in 2004 was $22,891 while the average income of coal miners pay has increased to $61,172.28 in 2006 for Harlan County.

Attachment III.16.A

Operational efficiency increases will have a positive effect on the socioeconomic conditions of the area by:

- Remediating existing sources of pollution,
- Implementing best management practices,
- Minimizing disturbances during mining phases,
- Adhering to the contemporaneous reclamation requirements,
- Providing a higher and better post-mining land use,
- Increase wildlife habitat,
- Mitigating existing poor quality streams,
- Increasing revenues for the Commonwealth of Kentucky,
- Increasing revenues for Harlan County,
- Decreasing unemployment in Harlan County,
- Reduce the loss of population and maintaining of cultural heritage in Harlan County,
- Providing higher standard of living in Harlan County through better ambulance, police, fire protection, education, transportation, utilities and increased wages.
- Improve the social structure of Harlan County,
- Providing infrastructure for Harlan County and surrounding area,
- Increasing domestic energy production for the Commonwealth of Kentucky and the US,
- Decreasing utility costs, and
- Increasing consumer confidence in Harlan County.